

EXHIBIT B

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**WSOU INVESTEMENTS, LLD D/B/A
BRAZOS LICENSING AND
DEVELOPMENT,**

Plaintiff,

v.

CANON, INC.,

Defendant.

6:20-cv-00980-ADA

CANON, INC.,

Third-Party Plaintiff,

v.

NXP USA, INC.,

Third-Party Defendant.

6:20-cv-00980-ADA

CANON’S PRELIMINARY INVALIDITY CONTENTIONS

Pursuant to the Scheduling Order entered on June 1, 2021 (Dkt. No. 38), Defendant and Third-Party Plaintiff Canon, Inc. (“Canon”) hereby serves its Preliminary Invalidity Contentions for U.S. Patent No. 7,054,346 (the “’346 patent”).

I. INTRODUCTORY STATEMENT

Plaintiff WSOU Investments, LLD D/B/A Brazos Licensing and Development’s (“WSOU’s”) Preliminary Infringement Contentions served on May 12, 2021 (the “Infringement Contentions”), are vague and incomplete, and do not provide the specificity necessary to allow Canon to adequately respond. For example, the Court’s Scheduling Order required WSOU to

“identify the earliest priority date (*i.e.* the earliest date of invention) for each asserted claim and produce: (1) all documents evidencing conception and reduction to practice for each claimed invention.” WSOU did not comply with this order, and instead refused to firmly identify a particular alleged priority date and did not produce any conception or reduction to practice documents, and instead made the open-ended statement that the ’346 patent “is entitled to a priority date of no later than May 7, 2001.” Infringement Contentions at p. 4. WSOU’s failure to timely produce conception and reduction to practice documents prejudices Canon’s ability to prepare its invalidity contentions, especially given WSOU’s assertion that the “subject matter described by the Asserted Claims, however, may have been conceived and reduced to practice prior to [May 7, 2001].” *Id.* In preparing its invalidity contentions, Canon is relying on WSOU’s alleged May 7, 2001 priority date.

WSOU’s Infringement Contentions are also without merit and frivolous for at least the reasons explained in Richard F. Martinelli’s April 27, 2021 letter to Jonathan K. Waldrop, which is incorporated herein by reference. WSOU’s Infringement Contentions did not address any of these deficiencies, and WSOU’s continued failure to present a *bona fide* infringement allegation has prejudiced Canon’s ability to prepare these invalidity contentions.

As another example, WSOU has not provided any contentions regarding alleged induced infringement beyond the conclusory, non-factual allegation that “Defendant has taken active steps with the specific intent to encourage and cause others to use each Accused Instrumentality in ways that infringe each Asserted Claim. Such active steps by Defendant with specific intent to induce infringement have included, among other things, advertising, promoting, marketing, making available for use, offering to sell, and/or selling the Accused Instrumentalities to others; encouraging and influencing others to import, offer to sell, and/or sell the Accused

Instrumentalities; directing and instructing others to use the Accused Instrumentalities in infringing ways; and by providing the Accused Instrumentalities to others.” Infringement Contentions at pp. 3-4.

Similarly, to the extent WSOU intended to raise any doctrine of equivalents arguments, it failed to adequately disclose any doctrine of equivalents infringement theory or provide any factual support therefor, and again did nothing more than recite the following boilerplate, conclusory language: “To the extent that Defendant alleges that one or more limitations of the Asserted Claims are not literally found in the Accused Instrumentalities, Plaintiff alleges that such limitations are found in or practiced by the Accused Instrumentalities under the doctrine of equivalents. Any differences alleged to exist between any of the Asserted Claims and any of the Accused Instrumentalities are insubstantial and that each Accused Instrumentality also meets each limitation under the doctrine of equivalents as the identified features of the Accused Instrumentality performs substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim limitation.” Infringement Contentions at p. 3.

Should WSOU be permitted to amend its infringement contentions or otherwise be permitted to pursue induced infringement or infringement under the doctrine of equivalents, Canon reserves the right to amend and supplement these invalidity contentions as appropriate.

Moreover, the discovery and *Markman* processes have not begun, and WSOU has not yet served its Final Infringement Contentions. Canon has prepared these invalidity contentions without the benefit of knowing the positions WSOU may take regarding the scope of the asserted claims, how the Court may construe the asserted claims, how WSOU may interpret the Court’s claim constructions, or how WSOU may attempt to read the claims onto the accused products.

Canon specifically reserves the right to amend these invalidity contentions as the case progresses, including after receiving WSOU's Final Infringement Contentions.

Canon understands that WSOU has asserted claims 1-4, 7, 9, 11-16, and 19 of the '346 patent, which are collectively referred to herein as the "Asserted Claims".

To the extent that these Infringement Contentions rely on or otherwise embody particular constructions of terms or phrases in the Asserted Claims, Canon is not proposing any such constructions as proper constructions of those terms or phrases. Various positions put forth in this document are predicated on WSOU's incorrect and overly broad interpretation of its claims as evidenced by its Infringement Contentions, dated May 12, 2021. Those positions are not intended to and do not necessarily reflect Canon's interpretation of the true and proper scope of WSOU's claims, and Canon reserves the right to adopt claim construction positions that differ from or even conflict with various positions put forth in this document. Nor should these invalidity contentions be interpreted as suggesting that WSOU's reading of the Asserted Claims is correct, that any of the Asserted Claims are not indefinite, or as an admission that any of Canon's products or technology infringe any claim of the Asserted Patent. Canon specifically denies any such infringement.

These invalidity contentions, including the attached exhibits, are subject to modification, amendment, and/or supplementation in the event that WSOU provides any information that it failed to provide in its Infringement Contentions or attempts to cure the deficiencies in its Infringement Contentions, in light of WSOU's Final Infringement Contentions, and/or in view of any Court's ruling regarding the construction or scope of the Asserted Claims, any findings as to the priority, conception, or reduction to practice date of the Asserted Claims, and/or positions that WSOU or its expert witness(es) may take concerning claim construction, infringement,

and/or invalidity issues. Further, because discovery and the *Markman* process have not begun, Canon reserves the right to revise, amend, and/or supplement the information provided herein, including identifying and relying on additional references, should Canon's further search and analysis yield additional information or references, consistent with the applicable rules and the Federal Rules of Civil Procedure.

These invalidity contentions are based on Canon's present knowledge and Canon reserves the right to amend these contentions if it identifies new material despite Canon's reasonable efforts to prepare these contentions. Canon's investigation regarding invalidity of the '346 patent over prior art and regarding other grounds of invalidity, including those based on 35 U.S.C. §§ 101, 102, 103, and 112, is ongoing.

Moreover, prior art not included in this disclosure, whether known or unknown to Canon, may become relevant. In particular, Canon is currently unaware of the extent, if any, to which WSOU will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Canon, or will contend that any of the identified references does not qualify as prior art. The identification of any patents as prior art shall be deemed to include identification of any foreign counterpart patents. To the extent that such issues arise, Canon reserves the right to identify additional teachings in the same references or in other references that anticipate or would have made the addition of the allegedly missing limitation obvious.

II. INVALIDITY OF THE '346 PATENT

A. Invalidity Based on 35 U.S.C. § 101

Each Asserted Claim is invalid for failing to recite patentable subject matter under 35 U.S.C. § 101.

In *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014), the Supreme Court established a two-part test for determining whether a claim recites patent-eligible subject matter. First, the court must determine whether the claims at issue are directed to any of the following patentable ineligible subject matter: laws of nature, natural phenomena, or abstract ideas. *Id.* at 2355. Second, if the claims are directed to ineligible subject matter, the court must then consider the claim elements—both individually and as an ordered combination—to determine whether they add an “inventive concept.” *Id.* Merely claiming a generic “computer” to implement an abstract idea is not sufficient to transform the computer into a patent-eligible invention. *Id.* at 2357-50.

The Asserted Claims of the '346 patent are drawn to an abstract idea of reducing the number of channels available to choose in a frequency hopping scheme. The claims are untethered to any specific implementation or environment because the patent does not materially limit the concepts and components that were commonly used to achieve the benefits of frequency hopping in ordinary wireless equipment. *See, e.g.*, '346 patent at 1:22-27 (“Current GSM deployments employ techniques such as frequency hopping in order to combat the effects of fading and interference. The performance improvement achieved through frequency hopping for voice users at the link and system level directly translates into higher capacity.”); 1:33-36 (“Frequency hopping is carried out burst by burst in order to mitigate the effects of slow fading and interference. It provides the following benefits: fading diversity, interferer diversity, and interference averaging.”); 1:45-47 (“If the number of frequencies is sufficient, then cyclic hopping provides full fading diversity.”); 1:55-57 (“The pseudo-random frequency hopping algorithm specified in GSM provides interferer diversity and achieves long-term interference averaging...”); 1:60-63 (“With respect to GSM pseudo-random frequency hopping, if a large

amount of spectrum is allocated, then there are many frequencies over which users can hop and repeated frequencies over a short interval are not common.”). The numerous references in the following sections confirm that the concept of frequency hopping was well-known in the art at the time.

Nor do the elements of the claims—whether individually or as a whole—evidence any “inventive concept.” The elements merely describe well-known frequency hopping steps, such as pseudorandomly selecting a frequency from a set of allowable frequencies at one point in time and prohibiting the selection of that same frequency at the time of a subsequent frequency selection. As explained in detail below and in the attached claim charts, both the concept of frequency hopping and the particular claim steps were well-known long before the time of the ’346 patent. Merely claiming a series of generic frequency hopping steps to implement an abstract idea is not sufficient to transform the claims into a patent-eligible invention.

Canon’s investigation concerning invalidity of the ’346 patent under Section 101 is ongoing. Canon thus reserves the right to supplement and/or amend its invalidity contentions with respect to § 101.

B. Invalidity Based on 35 U.S.C. §§ 102 and 103

The references in Exhibits A and B as well as the system prior art discussed below disclose elements of the Asserted Claims explicitly and/or inherently. These references may also be relied upon to show the state of the art at the relevant time and/or that elements of the Asserted Claims, or any Asserted Claim as a whole, would have been obvious to a person having ordinary skill in the art at the time of the alleged invention. Obviousness combinations are provided in the alternative to Canon’s anticipation contentions and are not to be construed as suggesting that any reference included in the combinations is not by itself anticipatory.

Canon is unable to know the extent to which WSOU will contend that limitations of the Asserted Claims are not disclosed in the art identified by Canon as anticipatory. If any such issue arises with respect to any such limitation, Canon reserves the right to identify other references and combinations that may make obvious the addition of the allegedly missing limitation.

The references discussed in Exhibits A and B as well as the system prior art discussed below are applied to the Asserted Claims.

The fact that Canon's disclosures pertain only to the Asserted Claims should not be construed to suggest that any of the other claims of the '346 patent are valid. Should WSOU be permitted to amend its infringement contentions to assert additional or alternative claims, or modify the bases for its contentions, Canon reserves the right to modify, amend, or supplement these disclosures.

Various references discussed in Exhibits A and B as well as the system prior art discussed below may be of greater or lesser relevance and different combinations of these references may be implicated depending on WSOU's Final Infringement Contentions, the Court's future rulings regarding claim scope, or WSOU's interpretation and application of the Court's future claim construction rulings. In view of Canon's uncertainty regarding how WSOU will contend the claims apply, the discussion of the different references in Exhibits A and B and the system prior art discussed below may reflect alternative applications of the prior art against the Asserted Claims. A more detailed discussion of Canon's Section 102 and/or 103 defenses will be set forth in Canon's expert report(s) on invalidity.

Canon provides pinpoint citations to exemplary portions of the prior art for the purpose of fairly disclosing the manner in which the prior art references meet the claim limitations. Such

citations should not be construed to mean that other portions of the prior art references are not relevant to the invalidity of the claims. Canon specifically reserves the right to rely on the entirety of any or all of the prior art references—whether charted or not charted—as a basis for asserting invalidity of the Asserted Claims and/or as necessary to supplement its invalidity contentions with additional citations and evidence.

1. Anticipation by Patents and Printed Publications

Based on Canon’s understanding of WSOU’s Infringement Contentions, at least one or more Asserted Claims are invalid as anticipated under 35 U.S.C. § 102 in view of the patent and printed publication prior art references listed below as indicated and discussed in Exhibit A, as well as any methods or systems which embody the concepts disclosed in those references. Exhibit A is a series of charts, numbered A-1 through A-19, that identify specific examples of where each claim limitation is found in a particular reference.

Table 1: List of Anticipatory References

<u>Chart</u>	<u>Reference</u>
A-1	U.S. Patent No. 4,654,859 to Kung (“Kung”). Kung was filed on April 9, 1986, issued on March 31, 1987.
A-2	U.S. Patent No. 5,541,954 to Emi (“Emi”). Emi was filed on November 22, 1994, issued on July 30, 1996.
A-3	U.S. Patent No. 5,377,221 to Munday (“Munday”). Munday was filed on May 10, 1985 and issued on December 27, 1994.
A-4	U.S. Patent No. 6,345,066 to Haartsen (“Haartsen ’066”). Haartsen ’066 was filed on March 22, 1999 and issued on February 2, 2002.
A-5	Japanese Patent Application Publication 10-271041 to Ohashi (“Ohashi”). Ohashi was published on October 9, 1998.
A-6	Japanese Patent Application Publication 7-336363 to Izumi (“Izumi”). Izumi was published on December 22, 1995.
A-7	U.S. Patent No. 6,651,207 to Dicker (“Dicker ’207”). Dicker ’207 was filed on August 20, 1999 and issued on November 18, 2003.

<u>Chart</u>	<u>Reference</u>
A-8	WIPO Patent Publication No. WO 00/74256 A1 to Boetzel (“Boetzel”). Boetzel was published on December 7, 2000.
A-9	U.S. Patent No. 6,751,249 to Cannon (“Cannon”). Cannon was filed on September 24, 1999 and issued on June 15, 2004.
A-10	U.S. Patent No. 6,480,721 to Sydon (“Sydon”). Sydon was filed on July 10, 1998 and issued on November 12, 2002.
A-11	U.S. Patent No. 5,323,447 to Gillis (“Gillis”). Gillis was filed on November 1, 1991 and issued on June 21, 1994.
A-12	U.S. Patent No. 6,115,407 to Gendel (“Gendel”). Gendel was filed on April 8, 1998 and issued on September 5, 2000.
A-13	U.S. Patent No. 7,440,484 to Schmidl (“Schmidl”). Schmidl was filed on April 19, 2001 and issued on October 21, 2008.
A-14	U.S. Patent No. 6,249,540 to Dicker (“Dicker ’540”). Dicker ’540 was filed on July 10, 1998, issued on June 19, 2001.
A-15	U.S. Patent No. 7,280,580 to Haartsen (“Haartsen ’580”). Haartsen ’580 was filed on October 15, 1999 and issued on October 9, 2007.
A-16	Z. Kostic and I. Maric, “Dynamic frequency hopping in wireless cellular systems-simulations of full-replacement and reduced-overhead methods,” 1999 IEEE 49th Vehicular Technology Conference, vol.2, pp. 914-918 (1999) (“Kostic”). Kostic was published on May 16, 1999.
A-17	“Adaptive Frequency Hopping, a Non-collaborative Coexistence Mechanism,” by Hongbing Gan et al. (“Gan”). Gan was published on March 12, 2001.
A-18	Japanese Patent Application Publication 10-84301 to Taki (“Taki”). Taki was published on March 31, 1998.
A-19	U.S. Patent No. 6,240,126 to Ohashi (“Ohashi US”). Ohashi US was filed on September 17, 1997 and issued on May 29, 2001.

Canon specifically asserts the references in the table above as anticipatory references under 35 U.S.C. §§ 102 (a), (b), and/or (e), but also asserts that the invention of such systems and/or methods prior to the alleged invention date of the asserted claims may also constitute prior art under 35 U.S.C. § 102(g), which will be confirmed as discovery progresses.

2. Anticipation by System Art

In addition to the patents and printed publications discussed above, additional products may also prior art that invalidates at least one Asserted Claim of the '346 patent under 35 U.S.C. §§ 102 (a), (b), and/or (g). This includes, for example, products that competed with the aforementioned products in the relevant timeframe.

Canon's investigation into additional products is ongoing. Discovery in this case has not yet commenced, and thus Canon reserves the right to supplement this response to identify these, or other, products as its investigation continues.

3. Obviousness

Based on Canon's understanding of WSOU's Infringement Contentions, Canon believes that the patent and printed publication references discussed in Exhibit A, as well as the system art prior art references discussed above, each invalidate one or more of the Asserted Claims. However, if the finder of fact determines that some limitation of a given claim was not disclosed by an asserted reference, Canon contends that the charted reference in combination with the knowledge and skill of a person of ordinary skill in the art at the time of the alleged invention and/or in combination with the disclosures of other prior art would have rendered all the Asserted Claims obvious. Exemplary reasons why this is the case are explained below.

The prior art references evidence teachings, suggestions, motivations, and/or other reasons to combine them in ways that render obvious all of the Asserted Claims. Certain references within Exhibit B are grouped or categorized according to a particular claim limitation that is disclosed within each reference. References from within a group share similar reasons as to why it would have been well within the level of ordinary skill in the art and obvious to combine a reference with prior art listed in Exhibit A or with other references in Exhibit B.

Thus, in addition to the specific combinations of prior art disclosed using claim charts, Canon reserves the right to rely on any combination of prior art references disclosed in these contentions.

In Exhibit B, different categories of prior art references are presented and a title is provided for each such category. The titles are provided for convenience only and do not constitute a binding characterization of what the references under that title disclose.

The Supreme Court has held that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1739 (2007). When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. *Id.* at 1740. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

To determine whether there is an apparent reason to combine the known elements as set forth in the Asserted Claims, a court can look to interrelated teachings of multiple references; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art. *Id.* at 1740-41. For example, obviousness can be demonstrated by showing that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims. *Id.* at 1743. Any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. *Id.* Common sense also teaches that familiar items may have obvious uses

beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. *Id.*

Thus, the motivation to combine the teachings of the prior art is found in the references disclosed in Exhibits A and B, the system prior art discussed above, and in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the fact that the prior art is generally directed towards frequency hopping within wireless communication systems; and (5) the predictable results obtained in combining the different elements of the prior art.

One of ordinary skill in the art would have therefore been motivated to make the combinations and/or modifications due to the recognition at the time of the alleged invention of a need for, in the '346 patent's words, "a wireless endpoint [that] employs frequency hopping for communicating signals in a wireless communications system." '346 patent at 2:37-39.

For example, many of the references cited herein reference the FCC regulations. *See, e.g.*, Haartsen '580 at 9:7-21, 9:22-27 and 9:61-10:5; Kung at 1:37-47 and 5:1-38; Gan at 39; Cannon at 3:43-54; Dicker '207 at 3:30-54 and 5:24-39. Indeed, Gan describes that FCC regulations require frequency hopping systems to "use at least 75 hopping frequencies" in the 2400-2483.5 MHz and 5725-5850 MHz bands and limit the average time of occupancy on any frequency "not be greater than 0.4 seconds within a 30 second period." Gan at 39. Dicker '207 discloses that "the total available frequencies needs to include seventy-five or more frequencies" within a 30 second period under the same FCC rules. Dicker '207 at 5:24-39. Although an "express, written motivation to combine" is not required (*Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1276 (Fed. Cir. 2004)), at least Haartsen '580's, Kung's, Gan's and Dicker '207's express statements regarding

the FCC regulations on frequency hopping confirm that one of ordinary skill in the art would look to references relating to those standards to arrive at the claimed solution of the '346 patent.

Additionally, for at least the reasons described above and discussed in each chart in Exhibit B charts, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in Exhibits A and B and the system art prior art references discussed above to meet the limitations of the Asserted Claims.

Furthermore, for at least the reasons described above and discussed in each chart in Exhibit B, the specification of the '346 patent admits that the elements of the claims were well-known at the time of the alleged invention. Incorporating these familiar elements according to known methods would yield predictable results and is accordingly obvious under *KSR*.

As set forth throughout Canon's Preliminary Invalidity Contentions and accompanying claim charts, Canon contends that each of the Asserted Claims are obvious because each limitation of each Asserted Claim is well known or obvious as is the combination of these limitations. Exhibit B provides charts B-1 through B-5, which set forth additional evidence of obviousness for certain claim elements. Based on Canon's understanding of WSOU's Infringement Contentions, each list in Exhibit B identifies specific pinpoint citations exemplifying where each particular limitation can be found in the prior art references within each list. For the reasons explained herein and in Exhibit B, a person of ordinary skill in the art would have been motivated to combine the references in each chart in Exhibit B with any of the primary references listed in Exhibit A with respect to the limitation each chart addresses. The absence of any reference charted in Exhibit A from one or more charts of Exhibit B is not an admission that such reference does not disclose any claim limitation.

Table 2: Additional Disclosure and Evidence of Obviousness

<u>Chart</u>	<u>Description</u>
B-1	Pseudorandom Frequency Selection
B-2	Limiting Selectable Frequencies
B-3	Storing Hopping Frequencies
B-4	Transmitting Allowable Frequency Information to Another Wireless Endpoint
B-5	Processor

4. Additional Background References

In addition to the anticipatory and obviousness references identified above, Canon may also rely on the references in the table below to establish the state of the art and the knowledge of a person of ordinary skill in the art at the time of the alleged inventions of the Asserted Claims. The basic concepts and components in the Asserted Claims were all well-known to persons of ordinary skill in the art prior to the alleged priority date of the Asserted Patent as reflected in the references listed in the following table.

Table 3: List of Additional Background References

<u>Reference</u>
All prior art publications available at: https://iee802.org/15/pub/TG2-Coexistence-Mechanisms.html
Canadian Patent No. 2,252,012
Japanese Patent Publication No. 10-107693
U.S. Patent Provisional Application No. 60/264,594 (and all prior art applications claiming priority thereto)
U.S. Patent No. 4,716,573
U.S. Patent No. 4,790,012
U.S. Patent No. 4,937,822

<u>Reference</u>
U.S. Patent No. 5,214,788
U.S. Patent No. 5,394,433
U.S. Patent No. 5,657,317
U.S. Patent No. 5,696,903
U.S. Patent No. 5,726,978
U.S. Patent No. 5,737,359
U.S. Patent No. 5,781,582
U.S. Patent No. 5,848,095
U.S. Patent No. 5,937,002
U.S. Patent No. 5,956,642
U.S. Patent No. 6,009,332
U.S. Patent No. 6,034,988
U.S. Patent No. 6,052,594
U.S. Patent No. 6,118,805
U.S. Patent No. 6,130,905
U.S. Patent No. 6,131,013
U.S. Patent No. 6,272,353
U.S. Patent No. 6,246,713
U.S. Patent No. 6,275,518
U.S. Patent No. 6,327,300
U.S. Patent No. 6,370,356
U.S. Patent No. 6,385,773
U.S. Patent No. 6,418,317

<u>Reference</u>
U.S. Patent No. 6,459,704
U.S. Patent No. 6,501,785
U.S. Patent No. 6,615,040
U.S. Patent No. 6,647,053
U.S. Patent No. 6,650,630
U.S. Patent No. 6,687,239
U.S. Patent No. 6,760,317
U.S. Patent No. 6,760,319
U.S. Patent No. 6,845,123
U.S. Patent No. 6,856,797
U.S. Patent No. 6,909,737
U.S. Patent No. 6,920,171
U.S. Patent No. 6,965,590
U.S. Patent No. 6,970,434
U.S. Patent No. 6,970,440
U.S. Patent No. 6,975,603
U.S. Patent No. 6,975,684
U.S. Patent No. 7,050,402
U.S. Patent No. 7,050,479
U.S. Patent No. 7,068,702
U.S. Patent No. 7,145,934
U.S. Patent No. 7,180,903
U.S. Patent No. 7,684,465

<u>Reference</u>
U.S. Patent Publication No. 2003/0081654 A1
WIPO Patent Publication No. WO 98/23101 A1
WIPO Patent Publication No. WO 01/11833 A1
“Specification of the Bluetooth System” v1.0 B
“Power Control and Active Channel Selection in an LPI FH System for HF Communications” by G. Bark et al.
“Power Control in an LIP Adaptive Frequency-Hopping System for HF Communications” by G. Bark et al.
“An Intelligent Frequency Hopping Scheme for Improved Bluetooth Throughput in an Interference-Limited Environment” by Anuj Batra et al.
“Proposal for Intelligent BT Frequency Hopping for Enhanced Coexistence” by Anuj Batra et al.
“An Overview and Comparison of Demand Assignment Multiple Access (DAMA) Concepts for Satellite Communications Networks” by Phillip M. Feldman
“Method for FH Sequence Adaptation” by Jaap C. Haartsen
“Multi-Adaptive FH Spread Spectrum System for Wireless High Data Rate Multimedia Services” by Young M. Kim et al.
“Dynamic Frequency Hopping for Limited-Bandwidth Cellular Systems” by Z. Kostic et al.
“Multiuser OFDM” by E. Lawrey
“Adaptive Frequency Hopping in HF Environments” by Dag Stranneby et al.
“Adaptive Frequency Hopping in HF Communications” by Yin Wenlong et al.
“Hop-Reservation Multiple Access (HRMA) for Ad-Hoc Networks” by Zhenyu Tang et al.

Discovery has not yet commenced, and Canon’s prior art investigation is therefore not yet complete. Canon reserves the right to present additional items of prior art under 35 U.S.C. § 102(a), (b), (e) and/or (g), and/or 35 U.S.C. § 103 located during the course of discovery or further investigation. Canon further reserves the right to assert invalidity under 35 U.S.C. §§

102(c), (d), and/or (f) to the extent that discovery or further investigation yields information forming the basis for such assertions.

C. Invalidity Based on 35 U.S.C. §§ 112

Canon lists below exemplary grounds upon which it contends that the Asserted Claims are invalid, under at least WSOU's apparent construction of the claims in its Infringement Contentions, for failure to meet one or more requirements of 35 U.S.C. § 112. This is particularly the case with respect to the apparent overbroad constructions that WSOU is applying to the Asserted Claims, which go beyond (and are not adequately described or enabled by) the purported inventions disclosed in the '346 patent. To the extent the Asserted Claims may eventually be construed so broadly as to cover the accused products, such a construction would render the Asserted Claims invalid for failure to meet the requirements of 35 U.S.C. § 112. A more detailed discussion of Canon's written description, enablement, and indefiniteness defenses will be set forth in Canon's expert report(s) on invalidity.

Canon's investigation concerning invalidity under 35 U.S.C. § 112 is ongoing. For example, discovery and the *Markman* process have not commenced, and WSOU has not provided adequate infringement contentions. Thus, Canon reserves the right to supplement and/or amend its invalidity contentions with respect to § 112. Such supplementation and/or amendments may include, but are not limited to, invalidity contentions based on indefiniteness, lack of written description, and/or lack of enablement should the claims be construed under 35 U.S.C. § 112(6).

1. Written Description / Enablement

Several Asserted Claims are invalid under 35 U.S.C. § 112(1) because they fail to provide an adequate written description of certain claim limitations such that one of ordinary

skill in the art would recognize that the named inventor(s) had possession of those claim limitations and/or fails to enable one of ordinary skill in the art to practice the claimed invention without undue experimentation. These claims include at least the following, as well as all claims that depend from the particularly identified claims below:

- Under WSOU's apparent interpretation of the Asserted Claims (*see* Infringement Contentions Ex. 1), all of the Asserted Claims are invalid because the specification lacks adequate written description support for the full scope of the claims and fails to enable the full scope of the claims. In particular, WSOU appears to assert that the Asserted Claims cover prohibiting a frequency from hopping selection for any reason, even if such prohibition does not accomplish the patent's goal of avoiding frequency repetition. '346 Patent at 3:39-40 ("In accordance with the invention, hopping frequency sequences are constrained in order to reduce, or minimize, repeated frequencies over a time period T.")

2. Indefiniteness

Several Asserted Claims are invalid under 35 U.S.C. § 112(2) because they fail to particularly point out and distinctly claim the subject matter which the named inventor(s) regards as the alleged invention. The claims, read in light of the specification and file history, "fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). The claims that are indefinite include at least those identified below and their respective dependent claims, for at least the reasons explained below:

- **"time period T" (all Asserted Claims)**: all of the Asserted Claims are invalid for failing to inform, with reasonable certainty, those skilled in the art about the scope of the invention, because a person of skill in the art has no basis to define the limits of both the "time period T" and "at least a portion of the time period T." The "time period T" and "at least a portion of the time period T" could be anything from a fraction of a second to years. Neither the claims, specification, nor the file history provide any basis to inform a person of skill in the art of the scope of this limitation.
- **"N/F Frequencies (Asserted Claims 1, 3-4, 7, 13, 15, 16, and 19)"**: Asserted Claims 1, 3-4, 7, 13, 15, 16, and 19 are invalid because they fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention because a person of skill in the art has no basis to define the limits of "N" or "F,"

as used in at least the following limitations: “pseudorandomly selecting a frequency from a set of N frequencies...over at least a portion of the time period T ,” “where N is the total number of frequencies available for frequency hopping,” “initializing a hopping set to a size of $[F/N]$ frequencies, the hopping set used to select therefrom hopping frequencies over a time period T ,” “where F is the number of frequencies in a hopping state, H , over which a wireless endpoint is constrained to hop,” “a hopping set comprising $[F/N]$ frequencies, the hopping set used to [pseudorandomly] select therefrom hopping frequencies over a time period T ”. The Asserted Claims provide no differentiation between “ N ” and “ F ,” and the patent provides no basis to determine what makes constitutes a frequency available for frequency hopping, *e.g.*, is it some physical limitation, code restriction, law of nature restriction, regulatory restriction, or otherwise. Neither the claims, specification, nor the file history provide any basis to inform a person of skill in the art of the scope of this limitation.

- **“at least a portion of the time period T ” (Asserted Claim 11):** Asserted Claim 11 is invalid because the claim term “at least a portion of the time period T ” lacks antecedent basis.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was served or delivered electronically to all counsel of record on the 7th day of July, 2021.

/s/ Weimin Ning

Weimin Ning